

RESPONSE AND REQUEST FOR RECONSIDERATION

Support.

The claims are amended to specify that the borating agent is boric acid. Support is found on page 9 in line 9. Also, claims 1 and 27 are amended to incorporate the quantitative amounts of the components from previous claim 17, which is now canceled. Claim 28 is amended to incorporate the quantitative amounts of the components from previous claim 18 and also including a new lower number for the relative amount of component (b), boric acid, of 3.7 parts (per 100 parts of the succinimide dispersant) in combination with the original upper number of 7.5. Support for the value of 3.7 is found on page 10 lines 24-27.

Response.

In the outstanding office action, the Examiner has substantially repeated the rejection based on the references that were earlier cited. The Examiner also noted that she had considered the experimental evidence presented in the earlier Declaration from Dr. Patterson. However she had remaining concerns with the data. It is submitted that the amendments presented herein and the remarks which follow address these concerns and should lead to allowance of the claims as amended.

The Examiner expressed concern in three areas relating to the comparative data:

- (A) The examples only showed the reaction product with boric acid, whereas other borating agents were claimed;
- (B) The examples only tested a single level of reacted boric acid (and DMTD), whereas the majority of the claims were not limited to any particular amounts;
- (C) The Examiner objected to the use of 2-ethylhexyl borate in the comparative example.

(A) Each of the claims now specifies the reaction product with boric acid. Accordingly, this first objection is now overcome.

(B) All of the claims now specify relative amounts of the required components that encompass with reasonable specificity the amount in the materials actually tested. As the examiner noted, the material tested in EX 2 (inventive) was a dispersant having relative amounts (uncorrected) of dispersant : DMTD : boric acid of 100 : 1.4 : 3.0. (The optional phosphorus component was not included, nor, for that matter, were any of a number of other optional components that might have been present.) It should be noted, however, that the correct calculation of these ratio would factor out the amount of diluent oil present in the initial succinimide dispersant, as all amounts presented in this application (unless otherwise specified) are to be oil-free amounts. See the statement to this effect on page 16, line 20. Since the starting 2751.5 g of oil-

containing dispersant contained 1100.6 g oil which should be subtracted, the corrected ratios of (a):(b):(c) are about 100 : 2.3 : 5. These amounts are well-centered within the claimed ranges such that is scientifically reasonable to understand that the observed effect will extend through out the claimed scope. In particular, see the comparison in the following table:

	dispersant	DMTD	boric acid
Example 2	100	2.3	5
Claim 28	100	1.5 – 3	3.7 – 7.5
Claim 30	100	1.5 – 3	1.5 – 7.5
Claims 1 and 27	100	0.75–6	0.075–7.5

Accordingly, it is submitted that for all the claims, and especially for claims 28 and 30, the breadth is reasonably supported by the examples.

(C) The Examiner had objected that the comparative example used 2-ethylhexyl borate as a boron source, while Le Suer, which the Examiner referred to as “the closest prior art,” used boric acid. It is respectfully submitted that this characterization is erroneous; and, in fact, the comparison is entirely proper.

It appears that the closest prior art is Davis, US 4,136,043, and not Le Suer. All of the Examiner’s rejections are based on Davis as the primary reference and Le Suer ’936 as only a secondary reference. This relative ranking correctly reflects the relative importance and the closeness of these references. That is, if one considers the pertinent features of Davis, we see that it discloses a dispersant that is treated with DMTD. The dispersant may optionally be a post-treated dispersant, and among the possible post-treatments is boration. On the other hand, Le Suer merely discloses borating of dispersants. It is evident that Davis is the closer reference.

It is well established that a comparison need be made only against the closest prior art. Moreover, comparison is not required against a combination of references, lest the invention be required to be compared against itself. See MPEP 716.02(e). Thus, the required comparison is against Davis, and not against Le Suer or a combination of Davis with Le Suer.

In the Declaration of Dr. Patterson, the inclusion of the 2-ethylhexyl borate in the comparative example was not because either Le Suer or Davis used such a material, but rather in order to provide a fair and scientifically reasonable test. Plainly, for the comparative example, boron could not have been simply eliminated. It is known that the inclusion of boron in lubricants often imparts beneficial properties, so a comparison of a formulation including boron versus a formulation without boron at all would not

have been a fair test of the present invention. In the present invention, it is required that the boron (and the DMTD) are both supplied as a reaction product with the dispersant, rather than being added separately by some other means. The presence of the 2-ethylhexylborate, in the comparative example, was simply a conventional means to provide boron to the formulation. In both the inventive example and the comparative example, the total boron concentration was the same, about 0.023%. Thus, only difference was that in the inventive example, the boron was reacted onto the dispersant.

To have included unreacted boric acid in the comparative example would have been both unwarranted and technically unreasonable. Boric acid is not substantially soluble in oil. For this reason boron is typically supplied to lubricant formulations either as a borate ester (such as the 2-ethylhexyl borate) or as a reaction product/complex with a dispersant. It is submitted, therefore, that the comparison provided in the Declaration is scientifically and legally sound.

Conclusion.

For the foregoing reasons it is submitted that the present claims are unobvious and in condition for allowance. The foregoing remarks are believed to be a full and complete response to the outstanding office action. Therefore an early and favorable reconsideration is respectfully requested. If the Examiner believes that only minor issues remain to be resolved, a telephone call to the Undersigned is suggested.

Any required fees or any deficiency or overpayment in fees should be charged or credited to deposit account 12-2275 (The Lubrizol Corporation).

Respectfully submitted,

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